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ABSTRACT

This list consists of essential competencies from the following specialized Ohio Competency Analysis Profiles: Beef and Sheep Producers; Crop Producer; Dairy Producer; Poultry Producer; and Swine Producer. Developed through a modified DACUM (Developing a Curriculum) process involving business, industry, labor, and community agency representatives in Ohio, this document is a comprehensive and verified employer competency profile for agricultural production occupations. The list contains units (with and without subunits), competencies, and competency builders that identify the skills needed to enter these occupations. The occupational, academic, and employability skills for this occupation or occupational area are included. Within the outline are three levels of items: core, advancing, and futuring. Core items identify the knowledge, skills, and attitudes essential for entry-level employment. These items are required to be taught and will be the basis for questions on the state vocational competency tests. Advancing items identify the knowledge, skills, and attitudes needed to advance in the occupation; futuring items identify the knowledge, skills, and attitudes needed to enter and remain in a given occupation 3 to 4 years from now. Titles of the 10 units are as follows: general safety precautions; crop and forage production; agricultural mechanics; marketing; business management; employability skills; beef and sheep production; dairy production; poultry production; and swine production. (KC)

ED345050

OCAP

OHIO'S COMPETENCY ANALYSIS PROFILE

AGRICULTURAL PRODUCTION

This list consists of essential competencies from the following specialized OCAPs:

Beef and Sheep Producer

Crop Producer

Dairy Producer

Poultry Producer

Swine Producer

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Division of Vocational and Career Education
Ohio Department of Education

Vocational Instructional Materials Laboratory
Center on Education and Training for Employment
THE OHIO STATE UNIVERSITY

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What is OCAP?

"A comprehensive and verified employer competency list will be developed and kept current for each program." This is the second objective of Imperative 3 of the *Action Plan for Accelerating the Modernization of Vocational Education: Ohio's Future at Work*. Ohio's Competency Analysis Profile (OCAP) lists are the Division of Vocational and Career Education's response to that objective. OCAP lists evolve from a modified DACUM process involving business, industry, labor, and community agency representatives from throughout Ohio. The OCAP process is directed by the Vocational Instructional Materials Laboratory at The Ohio State University's Center on Education and Training for Employment.

How is OCAP used?

Each OCAP contains units (with and without subunits), competencies, and competency builders that identify the occupational, academic*, and employability skills needed to enter a given occupation or occupational area. Within that outline there are three levels of items: core, advancing, and futuring. Core items identify the knowledge, skills, and attitudes essential for entry-level employment. These items are required to be taught and will be the basis for questions on the state vocational competency tests (scheduled to begin in school year 1993-94). Advancing items (marked with one asterisk) identify the knowledge, skills, and attitudes needed to advance in a given occupation. Futuring items (marked with two asterisks) identify the knowledge, skills, and attitudes needed to enter and remain in a given occupation three to four years from now.

School districts may add as many units, subunits, competencies, and/or competency builders as desired to reflect local employment needs, trends, and specialties. Local advisory committees should be actively involved in the identification and verification of additional items. Using OCAP lists, instructors will be able to formulate their vocational courses of study and monitor competency gains via the new criterion-referenced competency testing program that will be directly tied to the competencies identified on the OCAP lists.

***Academic competencies have not been identified for all OCAPs. At a later date math, communication, and science competencies will be released.**

The **Employability Skills** portion of this list was verified by the following employer panel:

Gary J. Corrigan, *Dana Corporation*, Ottawa Lake, Michigan
David Crooks, *Bowling Green State University Union Food Service*, Bowling Green, Ohio
Pat Doerman, *Farrow's Harley-Davidson*, Columbus, Ohio
William Gockenbach, *Kaiser Aluminum*, Heath, Ohio
Patsy Hathaway, *CBS Personnel Services, Inc.*, Dayton, Ohio
Marlyn Harman, *Marlyn Harman & Associates*, Cleveland, Ohio
Thomas R. Hyldahl, *Toledo Edison*, Toledo, Ohio
Carol C. James, *Ohio Contractors Association*, Columbus, Ohio
James Mack, *Chrysler Jeep Assembly*, Toledo, Ohio
Rocky McCoy, *Ironton-Lawrence Co. Community Action Organization*, Ironton, Ohio
James Needs, *Independent Crop Producer*, Upper Sandusky, Ohio
Ronald Simmons, *Former GM Executive*, Warren Ohio

Ohio Competency Analysis Profile
Agricultural Production

Unit 1: General Safety Precautions

Competency 1.0.1: Maintain safe work environment

Competency Builders:

1.0.1.1 Read and follow safety information
1.0.1.2 Organize and maintain clean, neat, and safe work area
1.0.1.3 Identify and correct safety hazards
1.0.1.4 Install and maintain safety devices
1.0.1.5 Provide well-lighted work area
1.0.1.6 Ventilate work areas
1.0.1.7 Identify and safely handle hazardous materials
1.0.1.8 Store hazardous materials
1.0.1.9 Clean up and dispose of hazardous materials
1.0.1.10 Determine when outside help is needed to control hazardous materials or situations
1.0.1.11 Comply with Occupational Safety and Health Administration (OSHA) regulations
1.0.1.12 Comply with on-farm policies
1.0.1.13 Determine when work conditions are unsafe
1.0.1.14 Identify hazardous areas

Competency 1.0.2: Apply safe work habits

Competency Builders:

1.0.2.1 Wear protective clothing, respirators, and equipment
1.0.2.2 Use safe lifting and carrying methods
1.0.2.3 Administer first aid
1.0.2.4 Follow safety directions on hazardous materials labels
1.0.2.5 Use fire extinguishers
1.0.2.6 Recognize symptoms of chemical injury or poisoning
1.0.2.7 Handle compressed gases
1.0.2.8 Maintain and use slow-moving-vehicle signs when operating vehicles on road
1.0.2.9 Prevent riders on agricultural and industrial equipment not designed for riders
1.0.2.10 Use safe animal-handling practices
1.0.2.11 Identify and report all potentially hazardous working conditions
1.0.2.12 Identify physical limitations leading to hazardous situations
1.0.2.13 Determine how environmental situations affect likelihood of hazardous situations

* Advancing
** Futuring

Competency 1.0.3: Operate and maintain equipment and facilities

Competency Builders:

1.0.3.1 Follow safety rules for equipment operation and maintenance
1.0.3.2 Operate equipment defensively
1.0.3.3 Maintain safety shields on all equipment
1.0.3.4 Shut down power equipment before servicing and adjusting equipment or clearing obstructions
1.0.3.5 Post and maintain danger signs
1.0.3.6 Recognize hazards of working near aboveground and below-ground public utilities
1.0.3.7 Follow correct procedures when working in silos and manure-handling facilities
1.0.3.8 Follow manufacturer's service recommendations
1.0.3.9 Follow posted procedures for hazardous situations*
1.0.3.10 Notify appropriate business personnel of hazardous situations*
1.0.3.11 Follow rules or guidelines of Environmental Protection Agency (EPA) and other government agencies regarding hazardous materials or procedures*
1.0.3.12 Identify authorities to contact in emergency situations*

Competency 1.0.4: Follow emergency response procedures

Competency Builders:

1.0.4.1 Check that all components of emergency response kit are in place
1.0.4.2 Maintain list of emergency telephone numbers
1.0.4.3 Post list of emergency telephone numbers in designated place
1.0.4.4 Instruct others in emergency procedures
1.0.4.5 Identify emergency situation
1.0.4.6 Contact proper personnel
1.0.4.7 Secure area
1.0.4.8 Use emergency response kit to contain emergency
1.0.4.9 Follow equipment start-up/shutdown procedures

Unit 2: Crop and Forage Production

Competency 2.0.1: Evaluate and manage soil

Competency Builders:

2.0.1.1 Evaluate soil drainage
2.0.1.2 Identify soil texture and percent organic matter
2.0.1.3 Identify soil structure and type
2.0.1.4 Determine slope
2.0.1.5 Determine soil-use capability for agriculture
2.0.1.6 Determine suitability of soil for nonagricultural uses
2.0.1.7 Evaluate problems affecting soil use and management
2.0.1.8 Determine and implement management and conservation practices
2.0.1.9 Comply with government regulations and guidelines

Competency 2.0.2: Plan crop planting

Competency Builders:

2.0.2.1 Identify seeds
2.0.2.2 Interpret seed tag information
2.0.2.3 Determine crops to plant
2.0.2.4 Establish crop rotation
2.0.2.5 Select seed
2.0.2.6 Conduct seed germination and vigor tests
2.0.2.7 Inoculate seed
2.0.2.8 Determine seeding rate
2.0.2.9 Store seed
2.0.2.10 Interpret planting charts on seed bag
2.0.2.11 Calculate number of bushels of seed needed
2.0.2.12 Evaluate stand of forage or winter wheat
2.0.2.13 Determine need for companion crop*
2.0.2.14 Determine time to plow*
2.0.2.15 Determine steps to improve stand*
2.0.2.16 Calculate price per pound of pure live seed*
2.0.2.17 Calendar rotation and acreage of each crop*

Competency 2.0.3: Practice soil and water conservation

Competency Builders:

2.0.3.1 Identify soil and water conservation structures and methods
2.0.3.2 Maintain soil and water conservation structures and methods
2.0.3.3 Evaluate planting and tillage methods
2.0.3.4 Interpret government programs and follow guidelines
2.0.3.5 Manage residue to reduce erosion

Competency 2.0.4: Plant and till crops

Competency Builders:

2.0.4.1 Follow general safety precautions
2.0.4.2 Select planting or seeding method and date
2.0.4.3 Prepare seedbed according to chosen planting method
2.0.4.4 Determine planting depth and rate
2.0.4.5 Calibrate planting equipment
2.0.4.6 Operate planting equipment
2.0.4.7 Compact seedbed after seeding
2.0.4.8 Cultivate crops
2.0.4.9 Identify planting failure problems
2.0.4.10 Determine soil conditions to minimize soil compaction
2.0.4.11 Identify crop problems
2.0.4.12 Determine cause of crop problems*

* Advancing
** Futuring

Competency 2.0.5: Test soil and plant tissues

Competency Builders:

2.0.5.1 Take soil samples
2.0.5.2 Submit prepared soil samples and forms to analysis laboratory
2.0.5.3 Interpret results of soil analysis
2.0.5.4 Take plant tissue samples
2.0.5.5 Submit prepared plant tissue samples and forms to analysis laboratory
2.0.5.6 Interpret results of plant analysis

Competency 2.0.6: Determine fertilization needs

Competency Builders:

2.0.6.1 Identify factors influencing fertilizer requirements
2.0.6.2 Use results of soil analysis to determine soil nutrient levels
2.0.6.3 Identify symptoms of plant nutrient deficiency
2.0.6.4 Determine crop nutrient needs
2.0.6.5 Determine amounts and kinds of nutrients and lime to apply
2.0.6.6 Evaluate effect of leaching on nutrient availability
2.0.6.7 Evaluate influence of soil pH on nutrient availability
2.0.6.8 Analyze and interpret manure-sample information
2.0.6.9 Define meaning of NPK and trace elements on fertilizer information

Competency 2.0.7: Develop fertilization plan

Competency Builders:

2.0.7.1 Interpret fertilization-rate charts
2.0.7.2 Select fertilizer analysis
2.0.7.3 Select fertilizer application method
2.0.7.4 Estimate costs of lime and fertilizer recommendations
2.0.7.5 Determine time for fertilizer application
2.0.7.6 Determine amount of lime needed to maintain pH levels
2.0.7.7 Calculate fertilization rates required for maximum return per dollar*

Competency 2.0.8: Fertilize crops

Competency Builders:

2.0.8.1 Follow general safety precautions
2.0.8.2 Mix fertilizer solutions
2.0.8.3 Calibrate fertilizer application equipment
2.0.8.4 Adjust fertilizer application rates
2.0.8.5 Transfer liquid fertilizer from nurse tank to applicator
2.0.8.6 Apply fertilizer
2.0.8.7 Recognize signs of fertilizer injury
2.0.8.8 Identify safety factors involved in handling NH_3
2.0.8.9 Transfer NH_3 from nurse tank to applicator*

* Advancing
** Futuring

Competency 2.0.9: Control insects and diseases

Competency Builders:

2.0.9.1 Follow general safety precautions
2.0.9.2 Inspect crops and determine when controls are needed
2.0.9.3 Follow chemical-use regulations
2.0.9.4 Complete prescribed certification requirements
2.0.9.5 Calibrate application equipment
2.0.9.6 Recognize chemical injury
2.0.9.7 Maintain application record
2.0.9.8 Recognize insect injury
2.0.9.9 Scout and identify common diseases and disease damage
2.0.9.10 Assess need for consultant field scouting
2.0.9.11 Identify bird and wildlife damage
2.0.9.12 Evaluate options and select control method*
2.0.9.13 Estimate insect population numbers*
2.0.9.14 Estimate cost of control program*
2.0.9.15 Interpret chemical labels and compatibility charts*
2.0.9.16 Select chemicals*
2.0.9.17 Apply biological control methods*
2.0.9.18 Identify control options*
2.0.9.19 Identify insects and diseases*
2.0.9.20 Assess degree of damage*

Competency 2.0.10: Control weeds

Competency Builders:

2.0.10.1 Follow general safety precautions
2.0.10.2 Scout and identify common weeds and weed seeds
2.0.10.3 Identify plants as monocots or dicots
2.0.10.4 Identify plants as annuals, biennials, or perennials
2.0.10.5 Identify plant parts and functions
2.0.10.6 Determine type of control needed
2.0.10.7 Cultivate fields
2.0.10.8 Clip fields
2.0.10.9 Rotate crops
2.0.10.10 Interpret chemical labels and compatibility charts
2.0.10.11 Follow chemical-use regulations
2.0.10.12 Calibrate application equipment
2.0.10.13 Maintain application record
2.0.10.14 Select and apply chemicals*
2.0.10.15 Select application method*
2.0.10.16 Estimate cost of control program*
2.0.10.17 Apply biological control methods*
2.0.10.18 Recognize chemical injury*

* Advancing
** Futuring

Competency 2.0.11: Apply pesticides

Competency Builders:

2.0.11.1 Follow general safety precautions
2.0.11.2 Use proper handling procedures
2.0.11.3 Wear protective clothing and equipment
2.0.11.4 Follow proper cleaning and storing procedures
2.0.11.5 Mix chemicals and load application equipment
2.0.11.6 Dispose of chemical containers
2.0.11.7 Use mechanical control methods
2.0.11.8 Calibrate application equipment*
2.0.11.9 Recognize chemical injury*
2.0.11.10 Use application equipment*
2.0.11.11 Use integrated pest management*
2.0.11.12 Use cultural control methods*

Competency 2.0.12: Harvest grain crops

Competency Builders:

2.0.12.1 Follow general safety precautions
2.0.12.2 Determine crop maturity
2.0.12.3 Determine moisture content
2.0.12.4 Determine proper harvesting conditions
2.0.12.5 Determine acreage to harvest at one time
2.0.12.6 Operate harvesting machinery
2.0.12.7 Clip grain stubble after harvesting
2.0.12.8 Calculate crop yields
2.0.12.9 Estimate harvest loss
2.0.12.10 Determine when to harvest*
2.0.12.11 Set and operate equipment to reduce harvest loss*
2.0.12.12 Prioritize harvesting areas*
2.0.12.13 Distribute and manage residue*
2.0.12.14 Minimize soil compaction*
2.0.12.15 Evaluate grain quality*

Competency 2.0.13: Harvest and manage forages

Competency Builders:

2.0.13.1 Follow general safety precautions
2.0.13.2 Determine crop maturity
2.0.13.3 Determine moisture content
2.0.13.4 Determine number of forage cuttings before harvest
2.0.13.5 Determine acreage to cut at one time
2.0.13.6 Determine proper harvesting conditions
2.0.13.7 Cut and condition hay
2.0.13.8 Rake and ted hay
2.0.13.9 Evaluate harvesting methods
2.0.13.10 Bale dried forages and bedding materials
2.0.13.11 Cut forages for green chop feeding
2.0.13.12 Determine harvest yields and nutritional content
2.0.13.13 Determine grazing intervals and stocking rates

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2.0.13.14 Evaluate grazing methods
2.0.13.15 Select and use desiccants*
2.0.13.16 Evaluate forage quality*
2.0.13.17 Utilize intensive grazing*

Competency 2.0.14: Store crops

Competency Builders:

2.0.14.1 Follow general safety precautions
2.0.14.2 Estimate amount of storage needed
2.0.14.3 Select storage facilities
2.0.14.4 Unload grain wagons
2.0.14.5 Estimate amount of grain in storage
2.0.14.6 Fill silo, bags, and balage
2.0.14.7 Estimate amount of forage in storage
2.0.14.8 Unload silage wagons
2.0.14.9 Stack bales
2.0.14.10 Evaluate need for silage and hay additives
2.0.14.11 Load and unload bales
2.0.14.12 Select drying system*
2.0.14.13 Clean and disinfect storage facilities*
2.0.14.14 Treat grain for pest control*
2.0.14.15 Clean grain*
2.0.14.16 Apply biological control of grain pests*

Competency 2.0.15: Maintain quality of stored crops

Competency Builders:

2.0.15.1 Follow general safety precautions
2.0.15.2 Use grain probe to collect crop samples
2.0.15.3 Determine safe moisture content for storing grains and forages
2.0.15.4 Determine condition of stored crops
2.0.15.5 Control temperature and humidity
2.0.15.6 Identify insect, disease, and environmental problems
2.0.15.7 Clean storage areas
2.0.15.8 Determine moisture content
2.0.15.9 Operate dryer and fans*
2.0.15.10 Treat storage area for pests*

* Advancing
** Futuring

Unit 3: Agricultural Mechanics

Competency 3.0.1: Operate and maintain small engines

Competency Builders:

3.0.1.1 Follow general safety precautions
3.0.1.2 Check fuel level and fuel engine
3.0.1.3 Schedule fluid and filter changes
3.0.1.4 Select oil
3.0.1.5 Check oil level and change oil and oil filters
3.0.1.6 Start, operate, and shut down engine
3.0.1.7 Mix gas and oil for two-cycle engine
3.0.1.8 Clean external engine components
3.0.1.9 Service air cleaner
3.0.1.10 Remove, clean, and regap spark plugs
3.0.1.11 Replace starter cord
3.0.1.12 Service and clean crankcase breathers
3.0.1.13 Service and clean fuel strainer
3.0.1.14 Check and service battery
3.0.1.15 Clean and adjust carburetor
3.0.1.16 Store engine
3.0.1.17 Remove manifold carbon deposits
3.0.1.18 Check engine compression
3.0.1.19 Troubleshoot problems
3.0.1.20 Pull and replace flywheel and clutch assembly*

Competency 3.0.2: Service cooling systems for large engines

Competency Builders:

3.0.2.1 Follow general safety precautions
3.0.2.2 Test antifreeze
3.0.2.3 Add radiator coolant
3.0.2.4 Replace hoses
3.0.2.5 Flush cooling system
3.0.2.6 Test thermostat
3.0.2.7 Replace thermostat
3.0.2.8 Replace water pump
3.0.2.9 Adjust or replace fan belt
3.0.2.10 Replace radiator
3.0.2.11 Inspect for leaks
3.0.2.12 Clean radiator exterior
3.0.2.13 Troubleshoot problems
3.0.2.14 Check cooling system filters and conditioners*
3.0.2.15 Select antifreeze*

Competency 3.0.3: Service lubrication systems for large engines

Competency Builders:

3.0.3.1 Follow general safety precautions
3.0.3.2 Select oil
3.0.3.3 Change oil and oil filters
3.0.3.4 Troubleshoot problems

* Advancing
** Futuring

Competency 3.0.4: Lubricate equipment

Competency Builders:

3.0.4.1 Follow general safety precautions
3.0.4.2 Grease or oil joints
3.0.4.3 Maintain grease fittings
3.0.4.4 Repack bearings
3.0.4.5 Remove and replace grease seal
3.0.4.6 Identify characteristics of grease and greaseless (i.e., sealed) bearings

Competency 3.0.5: Service fuel and air systems for large engines

Competency Builders:

3.0.5.1 Follow general safety precautions
3.0.5.2 Service air cleaner
3.0.5.3 Bleed diesel fuel system
3.0.5.4 Service fuel strainer, filters, and sediment bowl
3.0.5.5 Clean carburetor
3.0.5.6 Adjust engine governor
3.0.5.7 Replace exhaust system components
3.0.5.8 Replace fuel pump
3.0.5.9 Adjust engine valves
3.0.5.10 Troubleshoot problems
3.0.5.11 Perform basic carburetor overhaul*

Competency 3.0.6: Maintain and service electrical systems for large engines

Competency Builders:

3.0.6.1 Follow general safety precautions
3.0.6.2 Install battery
3.0.6.3 Clean and treat battery terminals, cables, and battery box
3.0.6.4 Charge battery
3.0.6.5 Replace fuses, circuit breakers, and light bulbs
3.0.6.6 Replace distributor cap and rotor
3.0.6.7 Replace spark plugs and wires
3.0.6.8 Clean and adjust spark plug gap
3.0.6.9 Check specific gravity of battery
3.0.6.10 Inspect and adjust or change breaker points
3.0.6.11 Check charging rate of ammeter
3.0.6.12 Troubleshoot problems
3.0.6.13 Time engine*

Competency 3.0.7: Service belt and drive chain assemblies

Competency Builders:

3.0.7.1 Follow general safety precautions
3.0.7.2 Replace belts
3.0.7.3 Maintain gear drives
3.0.7.4 Clean sprockets, chains, and gears

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* Advancing
** Futuring

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3.0.7.5 Replace gears
3.0.7.6 Replace and adjust chains
3.0.7.7 Replace pulleys
3.0.7.8 Replace rollers
3.0.7.9 Clean and lubricate drive parts
3.0.7.10 Inspect and correct belt tension
3.0.7.11 Recognize malfunctions
3.0.7.12 Follow general preventive maintenance program
3.0.7.13 Troubleshoot problems

Competency 3.0.8: Repair and service wheels, tires, and tracks

Competency Builders:

3.0.8.1 Follow general safety precautions
3.0.8.2 Check tire pressure
3.0.8.3 Check and tighten lug nuts
3.0.8.4 Protect tires during equipment storage
3.0.8.5 Replace implement wheels
3.0.8.6 Adjust wheel spacing
3.0.8.7 Service wheel bearing assembly
3.0.8.8 Check dual attachments
3.0.8.9 Troubleshoot problems
3.0.8.10 Patch tire*

Competency 3.0.9: Service hydraulic systems

Competency Builders:

3.0.9.1 Follow general safety precautions
3.0.9.2 Check and add oil
3.0.9.3 Check gauges with each operation
3.0.9.4 Replace oil filter
3.0.9.5 Bleed air from system
3.0.9.6 Check for leaks
3.0.9.7 Drain, clean, flush, and refill hydraulic system
3.0.9.8 Inspect and replace lines
3.0.9.9 Clean oil cooler
3.0.9.10 Recognize malfunctions
3.0.9.11 Troubleshoot problems

Competency 3.0.10: Hitch equipment to power units

Competency Builders:

3.0.10.1 Follow general safety precautions
3.0.10.2 Connect front-end-operated equipment
3.0.10.3 Connect 3-point-hitch equipment
3.0.10.4 Attach and detach power-takeoff equipment
3.0.10.5 Hitch towed equipment
3.0.10.6 Connect hydraulic systems and equipment
3.0.10.7 Connect electrical hookups
3.0.10.8 Connect safety chains

Competency 3.0.11: Operate equipment and vehicles

Competency Builders:

3.0.11.1 Follow general safety precautions
3.0.11.2 Identify engine components and functions
3.0.11.3 Refuel power units
3.0.11.4 Add wheel and front-end weights
3.0.11.5 Check prestart mechanism
3.0.11.6 Start and stop engine
3.0.11.7 Read equipment gauges
3.0.11.8 Operate equipment and vehicles under work conditions and on public roads according to certification standards
3.0.11.9 Use hand operating signals
3.0.11.10 Adjust equipment and vehicles
3.0.11.11 Observe warm-up and cool-down cycles of engine
3.0.11.12 Use engine block heater
3.0.11.13 Obtain driver's license, tractor certification, or equivalent

Competency 3.0.12: Recognize components of material-handling equipment

Competency Builders:

3.0.12.1 Follow general safety precautions
3.0.12.2 Identify components of soil loaders
3.0.12.3 Identify components of grain-handling equipment
3.0.12.4 Identify components of manure-handling equipment
3.0.12.5 Identify components of feed-handling equipment
3.0.12.6 Identify safety hazards of material-handling equipment

Competency 3.0.13: Operate material-handling equipment

Competency Builders:

3.0.13.1 Follow general safety precautions
3.0.13.2 Identify equipment
3.0.13.3 Adjust equipment

Competency 3.0.14: Clean and store equipment

Competency Builders:

3.0.14.1 Follow general safety precautions
3.0.14.2 Remove debris from equipment
3.0.14.3 Steam or high-pressure wash equipment
3.0.14.4 Protect equipment from weather
3.0.14.5 Lubricate for storage
3.0.14.6 Inspect for broken or worn parts
3.0.14.7 Prepare repair list*

* Advancing
** Futuring

Competency 3.0.15: Plan construction of farm structures

Competency Builders:

3.0.15.1 Follow general safety precautions
3.0.15.2 Select types of structures required
3.0.15.3 Determine life expectancy of structure
3.0.15.4 Determine space requirements
3.0.15.5 Design plans for new structures or improvement/expansion of current structures
3.0.15.6 Interpret blueprints
3.0.15.7 Select building materials
3.0.15.8 Identify grading categories for softwood and hardwood
3.0.15.9 Identify nominal and dressed sizes of lumber
3.0.15.10 Calculate board footage of lumber
3.0.15.11 Develop bill of materials
3.0.15.12 Determine energy requirements for heating, ventilating, or cooling
3.0.15.13 Determine soil and water table characteristics of building site*
3.0.15.14 Determine manure-handling methods*
3.0.15.15 Determine ventilation system*
3.0.15.16 Determine insulation*
3.0.15.17 Define zoning requirements and permits*

Competency 3.0.16: Construct with concrete

Competency Builders:

3.0.16.1 Follow general safety precautions
3.0.16.2 Use survey level
3.0.16.3 Select concrete materials
3.0.16.4 Select concrete tools
3.0.16.5 Identify differences between concrete and cement
3.0.16.6 Determine mix needed
3.0.16.7 Calculate volume of concrete to order or mix
3.0.16.8 Excavate structure sites for concrete pouring
3.0.16.9 Install concrete reinforcement
3.0.16.10 Build and remove concrete forms
3.0.16.11 Mix and pour concrete
3.0.16.12 Evaluate concrete slump
3.0.16.13 Finish concrete surface
3.0.16.14 Cure concrete
3.0.16.15 Determine weather conditions for installing and curing
3.0.16.16 Mix mortar
3.0.16.17 Lay blocks
3.0.16.18 Order concrete

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Competency 3.0.17: Construct with wood

Competency Builders:

3.0.17.1 Follow general safety precautions
3.0.17.2 Identify types of lumber
3.0.17.3 Cut lumber to dimension
3.0.17.4 Stack, season, and store lumber
3.0.17.5 Install and repair bracing
3.0.17.6 Install and repair wood siding
3.0.17.7 Install and repair doors and hardware
3.0.17.8 Cut and fit joints
3.0.17.9 Select and apply metal fasteners
3.0.17.10 Identify and use appropriate hand and power tools
3.0.17.11 Assemble joints with glue
3.0.17.12 Clean and maintain equipment
3.0.17.13 Repair minor leaks in roof
3.0.17.14 Replace window panes
3.0.17.15 Use wood treated for application
3.0.17.16 Select and install insulation

Competency 3.0.18: Install and maintain electrical systems

Competency Builders:

3.0.18.1 Follow general safety precautions
3.0.18.2 Read electric meter
3.0.18.3 Replace circuit breakers and fuses
3.0.18.4 Repair and replace electrical cord
3.0.18.5 Connect and disconnect alternative power sources
3.0.18.6 Select and use tools, measuring devices, and other equipment
3.0.18.7 Wire electrical circuits
3.0.18.8 Replace lighting fixtures
3.0.18.9 Clean and lubricate motors
3.0.18.10 Maintain records of electrical maintenance
3.0.18.11 Install and maintain electric motors on structure
3.0.18.12 Recognize malfunctions
3.0.18.13 Read and set electrical timers
3.0.18.14 Troubleshoot problems

Competency 3.0.19: Install and maintain water systems

Competency Builders:

3.0.19.1 Follow general safety precautions
3.0.19.2 Cut and fit pipe or tubing
3.0.19.3 Thread metal pipe
3.0.19.4 Install and repair pipe and pipe fittings
3.0.19.5 Determine required quantity and quality of water
3.0.19.6 Select water source
3.0.19.7 Determine tools and equipment needed
3.0.19.8 Contract for system installation
3.0.19.9 Select pipe, pipe fittings, insulation, and plumbing fixtures
3.0.19.10 Determine cost of materials

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3.0.19.11 Install and repair valves and faucets
3.0.19.12 Install insulation and filter
3.0.19.13 Troubleshoot and maintain automatic waterers
3.0.19.14 Recognize malfunctions
3.0.19.15 Read and interpret water-meter readings
3.0.19.16 Maintain plumbing
3.0.19.17 Troubleshoot problems
3.0.19.18 Plan system*
3.0.19.19 Install filters*
3.0.19.20 Unclog pipes*

Competency 3.0.20: Install and maintain fencing

Competency Builders:

3.0.20.1 Follow general safety precautions
3.0.20.2 Identify options in fencing systems
3.0.20.3 Determine amount of fence required
3.0.20.4 Select fencing materials
3.0.20.5 Select posts and braces
3.0.20.6 Select finish or preservative
3.0.20.7 Select fasteners
3.0.20.8 Lay out and stretch fence
3.0.20.9 Install posts and braces
3.0.20.10 Install gates
3.0.20.11 Install fasteners
3.0.20.12 Select and install electric charging units
3.0.20.13 Explain legal responsibilities of fence ownership

Competency 3.0.21: Use and maintain hand and power tools

Competency Builders:

3.0.21.1 Follow general safety precautions
3.0.21.2 Identify tools
3.0.21.3 Select tools
3.0.21.4 Follow operation instructions
3.0.21.5 Set up and adjust tools
3.0.21.6 Clean and lubricate tools
3.0.21.7 Store tools
3.0.21.8 Sharpen and maintain tools
3.0.21.9 Use and operate pneumatic tools

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Competency 3.0.22: Weld with gas

Competency Builders:

3.0.22.1 Follow general safety precautions
3.0.22.2 Set up and adjust gas welding equipment
3.0.22.3 Select rod
3.0.22.4 Select and apply flux
3.0.22.5 Cut metal
3.0.22.6 Weld steel in horizontal positions
3.0.22.7 Weld steel in nonhorizontal positions
3.0.22.8 Weld steel with filler rod
3.0.22.9 Weld steel by fusion
3.0.22.10 Braze metal
3.0.22.11 Hardsurface metal
3.0.22.12 Clean and store gas welding equipment
3.0.22.13 Secure and store gas cylinders
3.0.22.14 Make lap weld*
3.0.22.15 Make butt weld*
3.0.22.16 Make fillet weld*

Competency 3.0.23: Weld with electric arc and MIG

Competency Builders:

3.0.23.1 Follow general safety precautions
3.0.23.2 Select welding equipment and accessories
3.0.23.3 Select electrode sizes and types
3.0.23.4 Select settings
3.0.23.5 Prepare metal
3.0.23.6 Weld steel in horizontal positions
3.0.23.7 Weld steel in nonhorizontal positions
3.0.23.8 Weld pipe
3.0.23.9 Cut metal using electrode
3.0.23.10 Clean and store welding equipment
3.0.23.11 Make lap weld
3.0.23.12 Make butt weld
3.0.23.13 Make fillet weld
3.0.23.14 Hardsurface metal*
3.0.23.15 Weld cast iron*

Competency 3.0.24: Fabricate with metal

Competency Builders:

3.0.24.1 Follow general safety precautions
3.0.24.2 Identify types of metal
3.0.24.3 Design plans
3.0.24.4 Prepare bill of materials
3.0.24.5 Identify nominal sizes of metal
3.0.24.6 Test metal for type and hardness
3.0.24.7 Punch and drill metal
3.0.24.8 Cut metal
3.0.24.9 Select thread and size for tap or die

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3.0.24.10 Grind metal
3.0.24.11 Join metal with pop rivets
3.0.24.12 Join metal with spot welder
3.0.24.13 Bend sheet metal
3.0.24.14 Store metal
3.0.24.15 Attach hardware to sheet metal
3.0.24.16 Thread hole or rod
3.0.24.17 Determine metal properties*

Competency 3.0.25: Solder

Competency Builders:

3.0.25.1 Follow general safety precautions
3.0.25.2 Select soldering method
3.0.25.3 Select tools
3.0.25.4 Select flux
3.0.25.5 Select solder
3.0.25.6 Prepare surfaces
3.0.25.7 Apply solder
3.0.25.8 Clean equipment

Competency 3.0.26: Apply protective coatings

Competency Builders:

3.0.26.1 Follow general safety precautions
3.0.26.2 Determine type of coating
3.0.26.3 Use steam cleaner and pressure washer
3.0.26.4 Use paint and varnish remover
3.0.26.5 Sand surface
3.0.26.6 Apply masking tape
3.0.26.7 Mix thinner
3.0.26.8 Select and use application tools
3.0.26.9 Apply primer coat
3.0.26.10 Apply finish coat
3.0.26.11 Apply metal preservative
3.0.26.12 Apply wood preservative
3.0.26.13 Clean application tools
3.0.26.14 Dispose of leftover finish materials

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Competency 3.0.27: Plan electrical installations*

Competency Builders:

3.0.27.1 Follow general safety precautions*
3.0.27.2 Determine required electrical permits and codes*
3.0.27.3 Determine electrical needs*
3.0.27.4 Determine type of materials*
3.0.27.5 Plan distribution system*
3.0.27.6 Plan wiring layouts*
3.0.27.7 Plan service entrance*
3.0.27.8 Select wire and electrical supplies*
3.0.27.9 Determine total cost of materials*
3.0.27.10 Select alternative electrical sources*

Unit 4: Marketing

Competency 4.0.1: Analyze market

Competency Builders:

4.0.1.1 Explore all marketing opportunities
4.0.1.2 Research demand for finished product
4.0.1.3 Explain marketing terminology
4.0.1.4 Evaluate effect market grades have on market prices
4.0.1.5 Verify daily cash and future prices and determine local basis
4.0.1.6 Define market cycles
4.0.1.7 Calculate expected returns and profits
4.0.1.8 Evaluate niche marketing
4.0.1.9 Identify information sources
4.0.1.10 Interpret market reports*
4.0.1.11 Evaluate effect international events have on market prices*
4.0.1.12 Evaluate effect government programs have on market prices*

Competency 4.0.2: Establish marketing plans

Competency Builders:

4.0.2.1 Evaluate options of feeding grains, purchasing feeds, or marketing grains
4.0.2.2 Evaluate marketing options
4.0.2.3 Develop marketing plan for farm operation
4.0.2.4 Verify marketing plan
4.0.2.5 Determine most economical animal weight at which to market*

Competency 4.0.3: Market products

Competency Builders:

4.0.3.1 Sort and mark animals for market
4.0.3.2 Determine individual buyer requirements
4.0.3.3 Estimate market grades
4.0.3.4 Identify United States Department of Agriculture (USDA) grades
4.0.3.5 Verify market grades or classes of products sold
4.0.3.6 Consign animals to sales
4.0.3.7 Prepare advertisements and promotional activities
4.0.3.8 Explain purpose of Packer and Stockyards Act
4.0.3.9 Explain purpose of checkoff funds
4.0.3.10 Determine when to market
4.0.3.11 Complete delayed price transaction*
4.0.3.12 Complete hedging transaction*
4.0.3.13 Complete forward contract transaction*
4.0.3.14 Execute marketing plan*

Competency 4.0.4: Ship products

Competency Builders:

4.0.4.1 Follow general safety precautions
4.0.4.2 Arrange and verify cost of crop or livestock transport
4.0.4.3 Inspect vehicle for hazards
4.0.4.4 Prepare vehicle and load crops, livestock, or wool
4.0.4.5 Transport and unload crops, livestock, or wool
4.0.4.6 Calculate livestock shrinkage
4.0.4.7 Verify market class or grade on sales ticket
4.0.4.8 Verify weights and prices on sales ticket

Unit 5: Business Management

Competency 5.0.1: Perform general office work

Competency Builders:

5.0.1.1 Process incoming and outgoing mail
5.0.1.2 Establish filing system
5.0.1.3 File materials
5.0.1.4 Schedule and hold appointments
5.0.1.5 Use telephone
5.0.1.6 Write correspondence
5.0.1.7 Type materials
5.0.1.8 Operate calculator or other tabulating device
5.0.1.9 Operate computer
5.0.1.10 Use two-way radio
5.0.1.11 Meet with people
5.0.1.12 Evaluate software programs*

Competency 5.0.2: Perform general banking procedures

Competency Builders:

5.0.2.1 Write checks
5.0.2.2 Prepare bank deposit slips and make bank deposits
5.0.2.3 Balance bank statements
5.0.2.4 Explain purpose of electronic transfer of funds

Competency 5.0.3: Inventory business

Competency Builders:

5.0.3.1 Establish inventory system
5.0.3.2 Take physical inventory of structures, facilities, equipment, and livestock
5.0.3.3 Calculate amount of grain and forage
5.0.3.4 Determine volume or capacity of storage facilities
5.0.3.5 Categorize inventory items as current, intermediate, or long-term assets
5.0.3.6 Determine current market value of inventory items
5.0.3.7 Determine cost of carrying inventory

Competency 5.0.4: Supervise and manage labor

Competency Builders:

5.0.4.1 Determine amount of labor needed
5.0.4.2 Evaluate hiring labor versus contracting services
5.0.4.3 Prepare for periods of peak work loads
5.0.4.4 Establish pay scale, benefits, and incentives
5.0.4.5 Plan work schedules
5.0.4.6 Train workers
5.0.4.7 Evaluate worker performance
5.0.4.8 Establish job termination procedures
5.0.4.9 Comply with Workers Compensation regulations
5.0.4.10 Follow state and federal wage and labor regulations*
5.0.4.11 Hire workers*
5.0.4.12 Maintain clean and safe working environment*

Competency 5.0.5: Maintain supplies

Competency Builders:

5.0.5.1 Set minimum and maximum inventory levels
5.0.5.2 Purchase supplies
5.0.5.3 Compare costs and quality of supplies from different sources
5.0.5.4 Make maximum use of vendor discounts
5.0.5.5 Calculate shipping charges
5.0.5.6 Regulate storage facility environment
5.0.5.7 Clean storage area
5.0.5.8 Inspect storage area for damage and hazards
5.0.5.9 Use approved pest-control procedures

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Competency 5.0.6: Complete financial and tax records

Competency Builders:

5.0.6.1 Maintain record-keeping system
5.0.6.2 Record receipts, expenses, and mileage
5.0.6.3 Use computer software package to maintain financial records
5.0.6.4 Maintain livestock and crop enterprise records
5.0.6.5 Maintain records of accounts payable and receivable
5.0.6.6 Evaluate cash versus accrual reporting methods
5.0.6.7 Maintain payroll records
5.0.6.8 Compute book value of depreciable assets
5.0.6.9 Calculate and record depreciation
5.0.6.10 Determine depreciation method

Competency 5.0.7: Complete general and production records

Competency Builders:

5.0.7.1 Maintain consumption records for fuel, oil, and hydraulic fluid
5.0.7.2 Maintain inventory records
5.0.7.3 Maintain crop production records
5.0.7.4 Maintain livestock production records
5.0.7.5 Maintain pedigree records
5.0.7.6 Maintain equipment service records
5.0.7.7 Maintain labor records
5.0.7.8 Maintain health records
5.0.7.9 Maintain accident records
5.0.7.10 Determine field acreage using actual measurements and scale maps
5.0.7.11 Interpret farm map including field boundaries, major soil types, topography, vegetation, surface drainage, and travel areas
5.0.7.12 Draw and interpret farm map of subsurface drainage system
5.0.7.13 Update records for subsurface drainage system
5.0.7.14 Maintain pesticide-use records*
5.0.7.15 Maintain marketing sales records*

Competency 5.0.8: Summarize and analyze business records

Competency Builders:

5.0.8.1 Make ten-month summary of cash expenses and receipts
5.0.8.2 Calculate efficiency factors
5.0.8.3 Calculate family labor and management income
5.0.8.4 Determine net income and profit
5.0.8.5 Analyze and compare use of capital with standards for similar farms
5.0.8.6 Prepare income statement
5.0.8.7 Prepare balance sheet
5.0.8.8 Determine effectiveness of management practices
5.0.8.9 Analyze enterprise records*

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Competency 5.0.9: Apply time-management skills

Competency Builders:

5.0.9.1 Establish time-management system
5.0.9.2 Prioritize duties
5.0.9.3 Use electronic management procedures
5.0.9.4 Determine resource management*

Competency 5.0.10: Finance business

Competency Builders:

5.0.10.1 Develop cash-flow projections
5.0.10.2 Establish budget
5.0.10.3 Identify credit strengths and weaknesses
5.0.10.4 Evaluate risks of using borrowed capital
5.0.10.5 Plan one-year, intermediate, and long-term credit needs
5.0.10.6 Identify and evaluate credit sources
5.0.10.7 Evaluate loan repayment terms and conditions
5.0.10.8 Negotiate credit plan
5.0.10.9 Calculate cost of loan
5.0.10.10 Fill out loan application
5.0.10.11 Make loan payments
5.0.10.12 Select credit source
5.0.10.13 Sign loan agreement
5.0.10.14 Maintain balance of savings and cash
5.0.10.15 Identify factors influencing credit rating

Competency 5.0.11: Contribute to industry growth

Competency Builders:

5.0.11.1 Conduct promotional activities
5.0.11.2 Encourage legislation supporting industry
5.0.11.3 Participate in association/industry groups
5.0.11.4 Attend inservice education
5.0.11.5 Read and use professional journals and magazines

Competency 5.0.12: Prepare and file tax forms

Competency Builders:

5.0.12.1 Calculate property taxes
5.0.12.2 Evaluate tax consultant service
5.0.12.3 Determine amount of social security to be paid
5.0.12.4 Complete tax exemption form
5.0.12.5 Estimate income tax
5.0.12.6 Prepare federal income tax FICA schedule
5.0.12.7 Prepare federal income tax capital gains or loss schedule
5.0.12.8 Prepare federal income tax form 1040
5.0.12.9 Prepare state income tax form
5.0.12.10 Apply for refund for nonhighway use of federal and state fuel tax

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Competency 5.0.13: Plan insurance coverage

Competency Builders:

5.0.13.1 Determine type and amount of insurance needed
5.0.13.2 Evaluate different types of insurance
5.0.13.3 Identify insurance providers and evaluate programs
5.0.13.4 Complete insurance application and purchase insurance
5.0.13.5 Complete and file claim forms
5.0.13.6 Consult farm business manager*
5.0.13.7 Apply for collections*

Competency 5.0.14: Follow legal requirements

Competency Builders:

5.0.14.1 Identify government agencies regulating farm operations
5.0.14.2 Comply with employers' and employees' legal responsibilities
5.0.14.3 Establish system for government regulation compliance
5.0.14.4 Explain debt-restructuring purposes and processes

Competency 5.0.15: Obtain land

Competency Builders:

5.0.15.1 Determine amount of land needed
5.0.15.2 Determine amount of capital available for obtaining land
5.0.15.3 Determine cost-effectiveness of purchasing, leasing, or renting land
5.0.15.4 Appraise available land and identify factors influencing use
5.0.15.5 Evaluate and complete lease agreement
5.0.15.6 Evaluate land price cycles and determine when to purchase land
5.0.15.7 Purchase land
5.0.15.8 Evaluate lending sources
5.0.15.9 Evaluate and complete purchase agreement*

Competency 5.0.16: Plan structures

Competency Builders:

5.0.16.1 Calculate space requirements for various livestock
5.0.16.2 Estimate structure needs
5.0.16.3 Calculate returns expected from structure investments
5.0.16.4 Calculate construction, remodeling, and repair costs
5.0.16.5 Determine locations of new structures
5.0.16.6 Build or lease structures
5.0.16.7 Determine zoning requirements
5.0.16.8 Analyze potential of existing facilities or buildings
5.0.16.9 Analyze environmental impact of proposed building site
5.0.16.10 Evaluate tax consequences of building structures*

Competency 5.0.17: Manage equipment program

Competency Builders:

5.0.17.1 Determine equipment needs
5.0.17.2 Determine whether to purchase/lease equipment or to hire work done
5.0.17.3 Determine whether to repair or trade in equipment
5.0.17.4 Determine whether to do custom work for others
5.0.17.5 Estimate returns expected from equipment investments
5.0.17.6 Evaluate advantages and disadvantages of different types and brands of equipment
5.0.17.7 Evaluate joint ownership of equipment
5.0.17.8 Evaluate tax consequences of equipment ownership versus other options*

Competency 5.0.18: Purchase livestock

Competency Builders:

5.0.18.1 Determine types, numbers, and frame size of livestock
5.0.18.2 Verify health and soundness of animals
5.0.18.3 Identify purchase sources
5.0.18.4 Explain regulations pertaining to interstate shipment of livestock
5.0.18.5 Evaluate raising versus buying replacements
5.0.18.6 Evaluate custom feeding and retained ownership of livestock
5.0.18.7 Verify registration papers for purebred animals
5.0.18.8 Interpret production records
5.0.18.9 Negotiate purchase price

Competency 5.0.19: Enter, establish, and expand business

Competency Builders:

5.0.19.1 Communicate enterprise goals
5.0.19.2 Evaluate costs and returns for various enterprises
5.0.19.3 Evaluate options of sole proprietorships, cooperatives, corporations, or partnerships
5.0.19.4 Determine type of business organization
5.0.19.5 Decide whether to specialize or diversify
5.0.19.6 Develop plan for adjusting management practices
5.0.19.7 Determine when to secure professional help
5.0.19.8 Establish land-use plan
5.0.19.9 Reevaluate plans and maintain flexibility*

Competency 5.0.20: Plan retirement and estate

Competency Builders:

5.0.20.1 Evaluate retirement program options
5.0.20.2 Plan orderly transfer of property
5.0.20.3 Transfer ownership or sell farm
5.0.20.4 Develop plan for bestowing estate
5.0.20.5 Identify payment methods for estate and gift taxes
5.0.20.6 Make a will
5.0.20.7 Use professional estate planner*

Unit 6: Employability Skills
Subunit 6.1: Career Development

Competency 6.1.1: Investigate career options

Competency Builders:

6.1.1.1 Determine interests and aptitudes
6.1.1.2 Identify career options
6.1.1.3 Research occupations matching interests and aptitudes
6.1.1.4 Select career(s) that best match(es) interests and aptitudes
6.1.1.5 Identify advantages and disadvantages of career options, including nontraditional careers
6.1.1.6 Assess differences in wages, annual incomes, and job opportunities based on geographic location
6.1.1.7 Develop a career plan

Competency 6.1.2: Analyze potential barriers to employment

Competency Builders:

6.1.2.1 Identify common barriers to employment
6.1.2.2 Describe strategies to overcome employment barriers

Unit 6: Employability Skills
Subunit 6.2: Decision Making and Problem Solving

Competency 6.2.1: Apply decision-making techniques in the workplace

Competency Builders:

6.2.1.1 Identify the decision to be made
6.2.1.2 Compare alternatives
6.2.1.3 Determine consequences of each alternative
6.2.1.4 Make decisions based on values and goals
6.2.1.5 Evaluate the decision made

Competency 6.2.2: Apply problem-solving techniques in the workplace

Competency Builders:

6.2.2.1 Diagnose the problem and its causes
6.2.2.2 Identify alternatives and their consequences in relation to the problem
6.2.2.3 Examine multicultural and nonsexist dimensions of problem solving
6.2.2.4 Utilize resources to explore possible solutions to the problem
6.2.2.5 Compare and contrast the advantages and disadvantages of each solution
6.2.2.6 Determine appropriate action
6.2.2.7 Evaluate results

Unit 6: Employability Skills
Subunit 6.3: Work Ethic

Competency 6.3.1: Evaluate the relationship of self-esteem t· work ethic

Competency Builders:

6.3.1.1 Identify special characteristics and abilities in self and others
6.3.1.2 Identify internal and external factors that affect self-esteem

Competency 6.3.2: Analyze the relationship of personal values and goals to work ethic both in and out of the workplace

Competency Builders:

6.3.2.1 Distinguish between values and goals
6.3.2.2 Determine the importance of values and goals
6.3.2.3 Evaluate how values affect goals
6.3.2.4 Identify short-term and long-term goals
6.3.2.5 Prioritize personal goals
6.3.2.6 Describe how personal values are reflected in work ethic
6.3.2.7 Describe how interactions in the workplace affect personal work ethic
6.3.2.8 Examine how life changes affect personal work ethic

Competency 6.3.3: Demonstrate work ethic

Competency Builders:

6.3.3.1 Examine factors that influence work ethic
6.3.3.2 Exhibit characteristics that reflect an appropriate work ethic

Unit 6: Employability Skills
Subunit 6.4: Job-Seeking Skills

Competency 6.4.1: Prepare for employment

Competency Builders:

6.4.1.1 Identify traditional and nontraditional employment sources
6.4.1.2 Utilize employment sources
6.4.1.3 Research job opportunities, including nontraditional careers
6.4.1.4 Interpret equal employment opportunity laws
6.4.1.5 Explain the critical importance of personal appearance, hygiene, and demeanor throughout the employment process
6.4.1.6 Prepare for generic employment tests and those specific to an occupation/organization

Competency 6.4.2: Design a résumé

Competency Builders:

6.4.2.1 Identify personal strengths and weaknesses
6.4.2.2 List skills and/or abilities, career objective(s), accomplishments/achievements, educational background, and work experience
6.4.2.3 Demonstrate legible written communication skills using correct grammar, spelling, and concise wording
6.4.2.4 Complete résumé using various formats
6.4.2.5 Secure references

Competency 6.4.3: Complete and process job application forms

Competency Builders:

6.4.3.1 Explain the importance of an application form
6.4.3.2 Identify ways to obtain job application forms
6.4.3.3 Describe methods for handling illegal questions on job application forms
6.4.3.4 Demonstrate legible written communication skills using correct grammar, spelling, and concise wording
6.4.3.5 Return application to proper person, request interview, and follow up

Competency 6.4.4: Demonstrate interviewing skills

Competency Builders:

6.4.4.1 Investigate interview environment and procedures
6.4.4.2 Explain the critical importance of personal appearance, hygiene, and demeanor
6.4.4.3 Demonstrate question and answer techniques
6.4.4.4 Demonstrate methods for handling difficult and/or illegal interview questions

Competency 6.4.5: Secure employment

Competency Builders:

6.4.5.1 Identify present and future employment opportunities within an occupation/organization
6.4.5.2 Research the organization/company
6.4.5.3 Use follow-up techniques to enhance employment potential
6.4.5.4 Compare and evaluate job offers

Unit 6: Employability Skills
Subunit 6.5: Job Retention Skills

Competency 6.5.1: Analyze the organizational structure of the workplace

Competency Builders:

6.5.1.1 Identify and evaluate employer expectations regarding job performance, work habits, attitudes, personal appearance, and hygiene
6.5.1.2 Be aware of and obey all company policies and procedures
6.5.1.3 Examine the role/relationship between employee and employer
6.5.1.4 Recognize opportunities for advancement and reasons for termination

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** Futuring

Competency 6.5.2: Maintain positive relations with others

Competency Builders:

6.5.2.1 Exhibit appropriate work habits and attitude
6.5.2.2 Identify behaviors to establish successful working relationships
6.5.2.3 Cooperate and compromise through teamwork and group participation
6.5.2.4 Identify alternatives for dealing with harassment, bias, and discrimination based on race, color, national origin, sex, religion, handicap, or age

Unit 6: Employability Skills
Subunit 6.6: Job Advancement

Competency 6.6.1: Analyze opportunities for personal and career growth

Competency Builders:

6.6.1.1 Determine opportunities within an occupation/organization
6.6.1.2 Compare and contrast other opportunities
6.6.1.3 List benefits of job advancement
6.6.1.4 Evaluate factors involved when assuming a new position within or outside an occupation/organization

Competency 6.6.2: Exhibit characteristics needed for advancement

Competency Builders:

6.6.2.1 Display a positive attitude
6.6.2.2 Demonstrate knowledge of a position
6.6.2.3 Perform quality work
6.6.2.4 Adapt to changing situations and technology
6.6.2.5 Demonstrate capability for different positions
6.6.2.6 Participate in continuing education/training programs
6.6.2.7 Respect, accept, and work with ALL individuals in the workplace

Unit 6: Employability Skills
Subunit 6.7: Technology in the Workplace

Competency 6.7.1: Assess the impact of technology in the workplace

Competency Builders:

6.7.1.1 Cite how past business/industry practices have influenced present business/industry processes
6.7.1.2 Investigate the use of technology in the workplace
6.7.1.3 Analyze how present skills can be applied to learning new technologies

Competency 6.7.2: Use a variety of technological applications

Competency Builders:

6.7.2.1 Explore basic mathematical, scientific, computer, and technological principles
6.7.2.2 Use technology to accomplish assigned tasks
6.7.2.3 Create solutions to problems using technical means

* Advancing
** Futuring

Unit 6: Employability Skills
Subunit 6.8: Lifelong Learning

Competency 6.8.1: Apply lifelong learning to individual situations

Competency Builders:

6.8.1.1 Define lifelong learning
6.8.1.2 Identify factors that cause the need for lifelong learning

Competency 6.8.2: Adapt to change

Competency Builders:

6.8.2.1 Analyze the effects of change
6.8.2.2 Identify reasons why goals change
6.8.2.3 Describe the importance of flexibility when reevaluating goals
6.8.2.4 Evaluate the need for continuing education/training

Unit 6: Employability Skills
Subunit 6.9: Economic Education

Competency 6.9.1: Analyze global enterprise system

Competency Builders:

6.9.1.1 Identify characteristics of various enterprise systems
6.9.1.2 Examine the relationship between competition, risk, and profit
6.9.1.3 Illustrate how supply and demand influence price

Competency 6.9.2: Evaluate personal money management

Competency Builders:

6.9.2.1 Describe the need for personal management records
6.9.2.2 Identify methods of taxation
6.9.2.3 Analyze how credit affects financial security
6.9.2.4 Compare types and methods of investments
6.9.2.5 Prepare a personal budget
6.9.2.6 Be an informed and responsible consumer
6.9.2.7 Analyze the effects of advertising on the consumer

Unit 6: Employability Skills
Subunit 6.10: Balancing Work and Family

Competency 6.10.1: Analyze the effects of family on work

Competency Builders:

6.10.1.1 Recognize how family values, goals, and priorities are reflected in the workplace
6.10.1.2 Identify present and future family structures and responsibilities
6.10.1.3 Describe personal and family roles
6.10.1.4 Analyze concerns of working parent(s)
6.10.1.5 Examine how family responsibilities can conflict with work
6.10.1.6 Resolve family-related conflicts
6.10.1.7 Explain how to use support systems/community resources to help resolve family-related conflicts

Competency 6.10.2: Analyze the effects of work on family

Competency Builders:

6.10.2.1 Identify responsibilities associated with paid and nonpaid work
6.10.2.2 Compare the advantages and disadvantages of multiple incomes
6.10.2.3 Explain how work can conflict with family responsibilities
6.10.2.4 Explain how work-related stress can affect families
6.10.2.5 Identify family support systems and resources

Unit 6: Employability Skills
Subunit 6.11: Citizenship in the Workplace

Competency 6.11.1: Exercise the rights and responsibilities of citizenship in the workplace

Competency Builders:

6.11.1.1 Identify the basic rights and responsibilities of citizenship
6.11.1.2 Examine the history and contributions of all racial, ethnic, and cultural groups

Competency 6.11.2: Cooperate with others in the workplace

Competency Builders:

6.11.2.1 Identify situations in which compromise is necessary
6.11.2.2 Examine how individuals from various backgrounds contribute to work-related situations
6.11.2.3 Demonstrate initiative to facilitate cooperation
6.11.2.4 Give and receive constructive criticism to enhance cooperation

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** Futuring

Unit 6: Employability Skills
Subunit 6.12: Leadership

Competency 6.12.1: Evaluate leadership styles appropriate for the workplace

Competency Builders:

6.12.1.1 Identify characteristics of effective leaders
6.12.1.2 Compare leadership styles
6.12.1.3 Demonstrate effective delegation skills
6.12.1.4 Identify opportunities to lead in the workplace

Competency 6.12.2: Demonstrate effective teamwork skills

Competency Builders:

6.12.2.1 Identify the responsibilities of a valuable group member
6.12.2.2 Exhibit open-mindedness
6.12.2.3 Identify methods of involving each member of a team
6.12.2.4 Contribute to the efficiency and success of a group
6.12.2.5 Determine ways to motivate others

Competency 6.12.3: Utilize effective communication skills

Competency Builders:

6.12.3.1 Identify the importance of listening
6.12.3.2 Demonstrate assertive communication
6.12.3.3 Recognize the importance of verbal and nonverbal cues and messages
6.12.3.4 Analyze written material
6.12.3.5 Prepare written material
6.12.3.6 Give and receive feedback
6.12.3.7 Articulate thoughts
6.12.3.8 Use appropriate language

Unit 6: Employability Skills
Subunit 6.13: Entrepreneurship

Competency 6.13.1: Evaluate the role of small business in the economy

Competency Builders:

6.13.1.1 Identify the benefits of small business to a community
6.13.1.2 Analyze opportunities for small business in a community

Competency 6.13.2: Examine considerations of starting a business

Competency Builders:

6.13.2.1 Research a business idea
6.13.2.2 Compare various ways to become a small business owner
6.13.2.3 Investigate factors to consider in financing a new business
6.13.2.4 Evaluate entrepreneurship as a career option

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** Futuring

Unit 7: Beef and Sheep Production

Subunit 7.1: Animal Care

Competency 7.1.1: Perform general animal care procedures

Competency Builders:

7.1.1.1 Follow general safety precautions
7.1.1.2 Identify parts of animal anatomy
7.1.1.3 Apply animal identification procedures
7.1.1.4 Guard and control flock against predators
7.1.1.5 Provide adequate amounts of clean food and water
7.1.1.6 Observe animals daily
7.1.1.7 Handle and move animals with regard for safety of animals and handlers
7.1.1.8 Be aware of animal welfare issues
7.1.1.9 Bed animals
7.1.1.10 Weigh animals

Competency 7.1.2: Restrain, handle, or move animals

Competency Builders:

7.1.2.1 Follow general safety precautions
7.1.2.2 Pen animals according to number, size, weight, sex, temperament, and production
7.1.2.3 Isolate and observe newly purchased animals
7.1.2.4 Restrain animals
7.1.2.5 Prepare carriers
7.1.2.6 Load and unload animals
7.1.2.7 Work sheepdogs*

Competency 7.1.3: Shear sheep

Competency Builders:

7.1.3.1 Follow general safety precautions
7.1.3.2 Determine when to shear sheep
7.1.3.3 Contract with wool-shearing firm
7.1.3.4 Sharpen and adjust shears
7.1.3.5 Set up and test shearing equipment
7.1.3.6 Repair clippers
7.1.3.7 Shear sheep
7.1.3.8 Supervise shearing crew
7.1.3.9 Prepare fleece for market
7.1.3.10 Pack wool
7.1.3.11 Store wool

* Advancing
** Futuring

Unit 7: Beef and Sheep Production

Subunit 7.2: Genetics, Reproduction, and Breeding

Competency 7.2.1: Demonstrate knowledge of genetics and reproduction

Competency Builders:

7.2.1.1 Identify parts and functions of reproductive system
7.2.1.2 Identify genetic principles
7.2.1.3 Identify actions of hormones affecting reproduction*

Competency 7.2.2: Apply prebreeding factors*

Competency Builders:

7.2.2.1 Evaluate body condition*
7.2.2.2 Determine flushing program*
7.2.2.3 Evaluate sire's fertility and soundness*
7.2.2.4 Determine heat-synchronization program*

Competency 7.2.3: Plan breeding program

Competency Builders:

7.2.3.1 Schedule breeding intervals or times
7.2.3.2 Calculate losses caused by pregnancy delays
7.2.3.3 Evaluate artificial versus natural insemination
7.2.3.4 Determine age and/or weight for breeding
7.2.3.5 Arrange semen services
7.2.3.6 Determine number of sires needed for herd/flock
7.2.3.7 Establish and implement heat-detection plan
7.2.3.8 Evaluate embryo transfer, embryo transplant, and superovulation program*

Competency 7.2.4: Select animals

Competency Builders:

7.2.4.1 Determine types, amounts, and grades of livestock
7.2.4.2 Evaluate raising versus buying replacements
7.2.4.3 Evaluate bull and ram test data
7.2.4.4 Analyze production records and pedigrees
7.2.4.5 Select for body type and conformation
7.2.4.6 Determine guidelines for selecting donor cows/ewes for embryo transfer
7.2.4.7 Verify registration papers for purebred animals
7.2.4.8 Select for heritability of traits
7.2.4.9 Select breeds
7.2.4.10 Identify purchase sources
7.2.4.11 Evaluate purchase price

* Advancing
** Futuring

Competency 7.2.5: Breed animals

Competency Builders:

7.2.5.1 Follow general safety precautions
7.2.5.2 Store, handle, and evaluate semen
7.2.5.3 Breed using natural insemination
7.2.5.4 Schedule pregnancy checks
7.2.5.5 Determine calving/lambing dates
7.2.5.6 Identify animals unable to conceive
7.2.5.7 Arrange medical intervention for slow-to-conceive animals
7.2.5.8 Shear rams for breeding
7.2.5.9 Tag or shear ewes prior to lambing or breeding
7.2.5.10 Regulate heat cycles with hormone manipulation*
7.2.5.11 Determine insemination and embryo deposit time*
7.2.5.12 Breed using artificial insemination*
7.2.5.13 Palpate animals for reproductive evaluation*
7.2.5.14 Explain processes of and differences between embryo transplants, embryo transfers, and superovulation*

Competency 7.2.6: Care for newborn animals, mothers, and young animals

Competency Builders:

7.2.6.1 Follow general safety precautions
7.2.6.2 Identify signs of approaching parturition
7.2.6.3 Prepare facilities for parturition
7.2.6.4 Prepare mothers for parturition
7.2.6.5 Recognize calving/lambing disorders
7.2.6.6 Assist mothers during delivery
7.2.6.7 Check newborn animals for physical deformities or health problems
7.2.6.8 Clip navel cords and apply disinfectant
7.2.6.9 Check mothers for expelled placentas
7.2.6.10 Remove afterbirth from calving/lambing area
7.2.6.11 Check udders of mother and assist newborn animals in nursing
7.2.6.12 Record animal identification
7.2.6.13 Administer preventive health measures
7.2.6.14 Use grafting procedures on orphan lambs
7.2.6.15 Revive chilled newborns
7.2.6.16 Administer artificial respiration to newborns

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** Futuring

Unit 7: Beef and Sheep Production
Subunit 7.3: Waste Handling and Disposal

Competency 7.3.1: Evaluate, use, and maintain waste handling and disposal system

Competency Builders:

7.3.1.1 Follow general safety precautions
7.3.1.2 Identify agencies that control waste-handling regulations
7.3.1.3 Operate and maintain equipment
7.3.1.4 Follow local, state, and federal regulations*
7.3.1.5 Determine and manage nutrient value of manure*
7.3.1.6 Determine issues involved in water quality*

Competency 7.3.2: Handle and dispose of waste

Competency Builders:

7.3.2.1 Follow general safety precautions
7.3.2.2 Protect underground water sources by controlling runoff from feedlots and housing quarters
7.3.2.3 Determine application methods and rates
7.3.2.4 Dispose of dead animals
7.3.2.5 Follow local, state, and federal regulations

Unit 7: Beef and Sheep Production
Subunit 7.4: Nutrition, Feeds, and Feeding

Competency 7.4.1: Compare nutrient requirements

Competency Builders:

7.4.1.1 Evaluate production requirements
7.4.1.2 Evaluate reproduction requirements
7.4.1.3 Evaluate growth requirements
7.4.1.4 Evaluate maintenance requirements
7.4.1.5 Evaluate effects of environmental factors on nutritional requirements
7.4.1.6 Explain effects of genetic factors on nutritional requirements

Competency 7.4.2: Determine nutritive value of feedstuffs

Competency Builders:

7.4.2.1 Classify feeds according to major nutrient groups
7.4.2.2 Identify factors influencing feedstuff quality
7.4.2.3 Collect grain and forage samples for nutrient analysis
7.4.2.4 Interpret nutrient analysis methods and results
7.4.2.5 Interpret feed tag and label regulations
7.4.2.6 Interpret feed composition tables
7.4.2.7 Determine nutrients provided by forage

* Advancing
** Futuring

Competency 7.4.3: Balance rations*

Competency Builders:

7.4.3.1 Use Pearson square method*
7.4.3.2 Perform math calculations*
7.4.3.3 Determine costs*
7.4.3.4 Select feeds and additives*
7.4.3.5 Substitute feedstuffs and evaluate their effects*

Competency 7.4.4: Feed animals

Competency Builders:

7.4.4.1 Follow general safety precautions
7.4.4.2 Follow feeding guidelines
7.4.4.3 Identify feeds
7.4.4.4 Prepare feedstuffs
7.4.4.5 Control feed waste
7.4.4.6 Remove spoiled feedstuffs
7.4.4.7 Identify factors that cause loss of appetite
7.4.4.8 Evaluate and report ration palatability
7.4.4.9 Feed colostrum to newborn animals
7.4.4.10 Wean calves/lambs
7.4.4.11 Feed milk replacer to calves/lambs
7.4.4.12 Start calves/lambs on grain and roughage feeding
7.4.4.13 Clean and maintain equipment
7.4.4.14 Observe animal for loss of appetite
7.4.4.15 Identify reactions to flavors, enzymes, molds, and microtoxins*
7.4.4.16 Prepare mineral mixes*
7.4.4.17 Follow regulations for mixing feed additives*

Unit 7: Beef and Sheep Production

Subunit 7.5: Herd Health

Competency 7.5.1: Monitor health

Competency Builders:

7.5.1.1 Follow general safety precautions
7.5.1.2 Follow prescribed health program
7.5.1.3 Evaluate condition of animals
7.5.1.4 Take animals' temperatures
7.5.1.5 Determine when to call veterinarian
7.5.1.6 Isolate injured or diseased animals
7.5.1.7 Recognize common animal illnesses
7.5.1.8 Identify symptoms of nutritional imbalance
7.5.1.9 Develop health program*

Competency 7.5.2: Follow sanitation program

Competency Builders:

7.5.2.1 Follow general safety precautions
7.5.2.2 Identify sanitation problems
7.5.2.3 Disinfect buildings and equipment
7.5.2.4 Evaluate and use insecticides
7.5.2.5 Select cleaning chemicals, insecticides, and equipment

Competency 7.5.3: Follow preventive parasite-control program

Competency Builders:

7.5.3.1 Follow general safety precautions
7.5.3.2 Identify problems due to internal and external parasites
7.5.3.3 Identify common symptoms of internal and external parasites
7.5.3.4 Select materials to control parasites*

Competency 7.5.4: Treat minor health problems

Competency Builders:

7.5.4.1 Follow general safety precautions
7.5.4.2 Treat cuts and bruises
7.5.4.3 Record medication treatments
7.5.4.4 Identify types of injections and procedures
7.5.4.5 Identify and mark treated animals
7.5.4.6 Identify animals suffering from bloat
7.5.4.7 Treat animals suffering from bloat*
7.5.4.8 Determine amount of medication or material to use*
7.5.4.9 Administer medications and antibiotics according to withdrawal requirements*

Competency 7.5.5: Control bacterial, viral, and fungal diseases

Competency Builders:

7.5.5.1 Follow general safety precautions
7.5.5.2 Identify and treat calves/lambs for scours and dehydration
7.5.5.3 Define and identify common diseases for each species
7.5.5.4 Follow vaccination program
7.5.5.5 Provide clean, dry, draft-free environment

Competency 7.5.6: Manage medications, chemicals, and instruments

Competency Builders:

7.5.6.1 Follow general safety precautions
7.5.6.2 Store properly labeled medications and chemicals
7.5.6.3 Demonstrate proper use and care of instruments
7.5.6.4 Dispose of unused or outdated medications and chemicals
7.5.6.5 Dispose of used syringes and needles
7.5.6.6 Maintain inventory-and-use record
7.5.6.7 Follow government regulations

Competency 7.5.7: Perform basic herd and flock practices

Competency Builders:

7.5.7.1 Follow general safety precautions
7.5.7.2 Castrate animals
7.5.7.3 Dock lambs
7.5.7.4 Trim hooves
7.5.7.5 Inject implants
7.5.7.6 Stomach-tube lambs
7.5.7.7 Worm animals
7.5.7.8 Dehorn animals*

Unit 8: Dairy Production

Subunit 8.1: Milking and Milking Systems

Competency 8.1.1: Implement maintenance program

Competency Builders:

8.1.1.1 Follow general safety precautions
8.1.1.2 Clean pulsators
8.1.1.3 Establish premilking checklist
8.1.1.4 Replace rubber parts
8.1.1.5 Identify parts of milking and cooling systems
8.1.1.6 Recognize function of parts
8.1.1.7 Check vacuum gauges
8.1.1.8 Identify cooler problems*

Competency 8.1.2: Implement sanitation program

Competency Builders:

8.1.2.1 Follow general safety precautions
8.1.2.2 Clean milking parlor
8.1.2.3 Read and follow label directions for cleaning materials
8.1.2.4 Store milking equipment cleaning materials
8.1.2.5 Recognize milkstone and deposits*

Competency 8.1.3: Milk cows

Competency Builders:

8.1.3.1 Follow general safety precautions
8.1.3.2 Follow milking schedule
8.1.3.3 Operate milking equipment
8.1.3.4 Prepare udder and teats before each milking
8.1.3.5 Check for abnormal milk
8.1.3.6 Dip teats in sanitizing solution after milking
8.1.3.7 Attach and remove milkers
8.1.3.8 Prevent overmilking and undermilking
8.1.3.9 Recognize risk in handling animals

Competency 8.1.4: Manage mastitic cows*

Competency Builders:

8.1.4.1 Follow general safety precautions*
8.1.4.2 Use California mastitis test (CMT) to identify mastitis problems*
8.1.4.3 Flush milkers after milking*
8.1.4.4 Milk mastitic cows separately or last*
8.1.4.5 Establish teat-dipping program*
8.1.4.6 Interpret somatic cell count*
8.1.4.7 Dry-treat cows*
8.1.4.8 Clean cows*

Competency 8.1.5: Maintain milk quality*

Competency Builders:

8.1.5.1 Evaluate preliminary incubation count*
8.1.5.2 Evaluate plate loop count*
8.1.5.3 Evaluate somatic cell count*
8.1.5.4 Prevent water and drug content*

Unit 8: Dairy Production

Subunit 8.2: Animal Care

Competency 8.2.1: Perform general animal care procedures

Competency Builders:

8.2.1.1 Follow general safety precautions
8.2.1.2 Identify parts of animal anatomy
8.2.1.3 Follow animal identification system
8.2.1.4 Bed animals
8.2.1.5 Trim hooves*
8.2.1.6 Remove extra teats*
8.2.1.7 Castrate animals*
8.2.1.8 Dehorn animals*
8.2.1.9 Inject implants*

Competency 8.2.2: Restrain or pen animals

Competency Builders:

8.2.2.1 Follow general safety precautions
8.2.2.2 Pen animals according to size, weight, sex, temperament, and production
8.2.2.3 Isolate and observe newly purchased animals
8.2.2.4 Restrain animals

Competency 8.2.3: Haul animals

Competency Builders:

8.2.3.1 Follow general safety precautions
8.2.3.2 Prepare carriers
8.2.3.3 Load and unload animals

Unit 8: Dairy Production

Subunit 8.3: Genetics, Reproduction, and Breeding

Competency 8.3.1: Demonstrate knowledge of genetics and reproduction

Competency Builders:

8.3.1.1 Identify parts and functions of reproductive system
8.3.1.2 Identify actions of hormones affecting reproduction
8.3.1.3 Apply principles of genetics
8.3.1.4 Establish and implement heat-detection plan

Competency 8.3.2: Plan breeding program*

Competency Builders:

8.3.2.1 Schedule breeding for even milk production*
8.3.2.2 Schedule breeding for twelve- to thirteen-month calving intervals*
8.3.2.3 Calculate losses caused by pregnancy delays*
8.3.2.4 Evaluate artificial versus natural insemination*
8.3.2.5 Determine age and/or weight for breeding*
8.3.2.6 Arrange semen services*

Competency 8.3.3: Select animals*

Competency Builders:

8.3.3.1 Determine types, amounts, and grades of livestock*
8.3.3.2 Evaluate raising versus buying replacements*
8.3.3.3 Analyze linear classification scores*
8.3.3.4 Evaluate sires for proofs and reliability records*
8.3.3.5 Analyze production records and pedigrees*
8.3.3.6 Select for body type and conformation*
8.3.3.7 Determine guidelines for selecting donor cows for embryo transfer*
8.3.3.8 Verify registration papers for purebred animals*
8.3.3.9 Interpret Dairy Herd Improvement Association (DHIA) production records*
8.3.3.10 Evaluate pedigrees*
8.3.3.11 Select for heritability of traits*
8.3.3.12 Select breeds*
8.3.3.13 Identify purchase sources*
8.3.3.14 Negotiate purchase price*

Competency 8.3.4: Breed animals*

Competency Builders:

8.3.4.1 Follow general safety precautions*
8.3.4.2 Regulate heat cycles with hormone therapy*
8.3.4.3 Store and handle semen*
8.3.4.4 Determine insemination and embryo deposit time*
8.3.4.5 Breed using artificial insemination*
8.3.4.6 Breed using natural insemination*
8.3.4.7 Schedule pregnancy checks*

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8.3.4.8 Determine calving dates*
8.3.4.9 Identify animals unable to conceive*
8.3.4.10 Arrange medical intervention for slow-to-conceive animals*

Competency 8.3.5: Care for newborn animals, mothers, and young animals

Competency Builders:

8.3.5.1 Follow general safety precautions
8.3.5.2 Identify signs of approaching parturition
8.3.5.3 Prepare facilities for parturition
8.3.5.4 Prepare mothers for parturition
8.3.5.5 Determine calving disorders
8.3.5.6 Assist mothers during delivery
8.3.5.7 Check newborn animals for physical deformities or health problems
8.3.5.8 Clip navel cords and apply disinfectant
8.3.5.9 Clean newborn animals
8.3.5.10 Check mothers for expelled placentas
8.3.5.11 Remove afterbirth from calving area
8.3.5.12 Assist newborn animals in nursing
8.3.5.13 Record animal identification
8.3.5.14 Administer preventive health measures

Unit 8: Dairy Production

Subunit 8.4: Waste Handling and Disposal

Competency 8.4.1: Establish and maintain waste handling and disposal system*

Competency Builders:

8.4.1.1 Follow general safety precautions*
8.4.1.2 Follow local, state, and federal legislation*
8.4.1.3 Operate and maintain equipment*
8.4.1.4 Manage nutrient value of manure*

Competency 8.4.2: Handle and dispose of waste

Competency Builders:

8.4.2.1 Follow general safety precautions
8.4.2.2 Control waste runoff from feedlots and housing quarters
8.4.2.3 Determine application methods and rates
8.4.2.4 Dispose of dead animals*
8.4.2.5 Follow local, state, and federal legislation*

Unit 8: Dairy Production

Subunit 8.5: Nutrition, Feeds, and Feeding

Competency 8.5.1: Establish nutrient requirements*

Competency Builders:

8.5.1.1 Determine production requirements*
8.5.1.2 Determine reproduction requirements*
8.5.1.3 Determine growth requirements*
8.5.1.4 Determine maintenance requirements*
8.5.1.5 Determine effects of environmental factors on nutritional requirements*

Competency 8.5.2: Determine nutritive value of feedstuffs*

Competency Builders:

8.5.2.1 Classify feeds according to major nutrient groups*
8.5.2.2 Identify factors influencing feedstuff quality*
8.5.2.3 Collect grain and forage samples for nutrient analysis*
8.5.2.4 Interpret nutrient analysis methods and results*
8.5.2.5 Interpret feed tags and labels*
8.5.2.6 Interpret nutrient requirement tables*
8.5.2.7 Interpret feed composition tables*
8.5.2.8 Determine nutrients provided by pasture*

Competency 8.5.3: Balance rations*

Competency Builders:

8.5.3.1 Use nutrient analysis results*
8.5.3.2 Perform math calculations*
8.5.3.3 Determine costs*
8.5.3.4 Select feeds and additives*
8.5.3.5 Substitute feedstuffs*

Competency 8.5.4: Feed animals

Competency Builders:

8.5.4.1 Follow general safety precautions
8.5.4.2 Follow feed-handling guidelines
8.5.4.3 Identify feeds
8.5.4.4 Prepare feedstuffs
8.5.4.5 Prepare mineral mixes
8.5.4.6 Follow regulations for mixing feed additives
8.5.4.7 Control waste feed
8.5.4.8 Remove spoiled feedstuffs
8.5.4.9 Observe animal for loss of appetite
8.5.4.10 Evaluate and report ration palatability
8.5.4.11 Lead-feed producing cows
8.5.4.12 Feed colostrum to newborn animals
8.5.4.13 Feed veal calves

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8.5.4.14 Start calves on bucket feeding
8.5.4.15 Feed milk replacer to calves
8.5.4.16 Start calves on grain and roughage feeding
8.5.4.17 Clean and maintain equipment
8.5.4.18 Wean calves*

Unit 8: Dairy Production

Subunit 8.6: Herd Health

Competency 8.6.1: Monitor health

Competency Builders:

8.6.1.1 Follow general safety precautions
8.6.1.2 Follow health program
8.6.1.3 Evaluate condition of animals
8.6.1.4 Take animals' temperatures
8.6.1.5 Determine when to call veterinarian
8.6.1.6 Isolate injured or diseased animals
8.6.1.7 Recognize common animal illnesses

Competency 8.6.2: Follow sanitation program

Competency Builders:

8.6.2.1 Follow general safety precautions
8.6.2.2 Identify sanitation problems
8.6.2.3 Disinfect buildings and equipment
8.6.2.4 Use insect repellants
8.6.2.5 Select cleaning chemicals and equipment*

Competency 8.6.3: Follow parasite-control program

Competency Builders:

8.6.3.1 Follow general safety precautions
8.6.3.2 Apply pesticides
8.6.3.3 Identify common internal and external parasites and their symptoms*
8.6.3.4 Select materials to control parasites*
8.6.3.5 Construct and maintain back scratcher for insecticide application*

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Competency 8.6.4: Treat minor health problems

Competency Builders:

8.6.4.1 Follow general safety precautions
8.6.4.2 Treat cuts and bruises
8.6.4.3 Record medication treatments
8.6.4.4 Identify types of injections and procedures
8.6.4.5 Treat animals suffering from bloat
8.6.4.6 Identify and mark treated animals
8.6.4.7 Determine amount of medication or material to use*
8.6.4.8 Administer medications and antibiotics*

Competency 8.6.5: Control nutritional problems

Competency Builders:

8.6.5.1 Administer stomach magnets
8.6.5.2 Identify symptoms of nutritional imbalance*
8.6.5.3 Supplement diet to lower incidence of milk fever*

Competency 8.6.6: Control bacterial, viral, and fungal diseases

Competency Builders:

8.6.6.1 Follow general safety precautions
8.6.6.2 Identify common disease symptoms
8.6.6.3 Follow vaccination program
8.6.6.4 Follow mastitis-control program
8.6.6.5 Treat calves for scours
8.6.6.6 Regulate air movement and temperature in facilities*

Competency 8.6.7: Manage medications and chemicals

Competency Builders:

8.6.7.1 Follow general safety precautions
8.6.7.2 Store properly labeled medications and chemicals
8.6.7.3 Dispose of unused or outdated medications and chemicals
8.6.7.4 Maintain inventory-and-use record
8.6.7.5 Follow government regulations

Unit 8: Dairy Production

Subunit 8.7: Marketing and Business Management*

Competency 8.7.1: Analyze market*

Competency Builders:

8.7.1.1 Calculate end-product pricing system for milk*
8.7.1.2 Compare and evaluate base milk prices and milk market differential prices*

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Competency 8.7.2: Market products*

Competency Builders:

8.7.2.1 Determine how milk is priced*
8.7.2.2 Photograph animals for advertisements*
8.7.2.3 Contract for milk pickup*

Competency 8.7.3: Purchase livestock*

Competency Builders:

8.7.3.1 Interpret DHIA production records*
8.7.3.2 Evaluate pedigrees*

Unit 9: Poultry Production
Subunit 9.1: Waste Handling and Disposal

Competency 9.1.1: Operate and maintain waste handling and disposal system

Competency Builders:

9.1.1.1 Follow general safety precautions
9.1.1.2 Operate and maintain equipment
9.1.1.3 Follow local, state, and federal legislation*
9.1.1.4 Manage nutrient value of manure*

Competency 9.1.2: Handle and dispose of waste

Competency Builders:

9.1.2.1 Follow general safety precautions
9.1.2.2 Control runoff from housing quarters
9.1.2.3 Dispose of dead birds
9.1.2.4 Remove all litter when needed
9.1.2.5 Remove wet litter from house
9.1.2.6 Dispose of manure and used litter
9.1.2.7 Follow local, state, and federal legislation*

Unit 9: Poultry Production
Subunit 9.2: Poultry Management

Competency 9.2.1: Provide for physical needs

Competency Builders:

9.2.1.1 Prepare feeding equipment
9.2.1.2 Prepare watering equipment
9.2.1.3 Prepare brooding equipment
9.2.1.4 Ensure adequate water supply
9.2.1.5 Supply litter
9.2.1.6 Prepare ventilation equipment

Competency 9.2.2: Prepare housing

Competency Builders:

9.2.2.1 Select housing for new flock
9.2.2.2 Clean and disinfect walls, ceilings, and equipment
9.2.2.3 Clean and check medicator
9.2.2.4 Clean feed bins
9.2.2.5 Spread litter
9.2.2.6 Prepare brooders for reuse
9.2.2.7 Light and adjust brooders
9.2.2.8 Monitor stove and room temperature
9.2.2.9 Install brooder guards for young birds
9.2.2.10 Locate and hang curtains for partial house brooding
9.2.2.11 Prepare automatic feeders
9.2.2.12 Set up temporary feeders and waterers for young birds
9.2.2.13 Adjust feeders and waterers
9.2.2.14 Put out feed and water

Competency 9.2.3: Care for birds

Competency Builders:

9.2.3.1 Cull birds
9.2.3.2 Provide clean water and feed
9.2.3.3 Provide adequate water and feed space
9.2.3.4 Provide acceptable litter conditions
9.2.3.5 Provide vitamins and medication
9.2.3.6 Trim beaks*

Competency 9.2.4: Prepare for bird removal

Competency Builders:

9.2.4.1 Dismantle and move equipment out of way of catching crew
9.2.4.2 Prevent birds from piling up and smothering while catching crew is working

Competency 9.2.5: Care for eggs

Competency Builders:

9.2.5.1 Adjust temperature and humidity in egg storage room
9.2.5.2 Gather eggs
9.2.5.3 Remove cracked eggs and leakers
9.2.5.4 Wash soiled eggs
9.2.5.5 Refrigerate eggs
9.2.5.6 Case or rack eggs
9.2.5.7 Candle eggs*
9.2.5.8 Grade eggs*

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Competency 9.2.6: Market products

Competency Builders:

9.2.6.1 Secure contract to grow broilers
9.2.6.2 Secure contract to grow turkeys and procure poults
9.2.6.3 Secure contract to produce eggs*
9.2.6.4 Chelate eggs to block cholesterol absorption*

Unit 9: Poultry Production
Subunit 9.3: Nutrition, Feeds, and Feeding

Competency 9.3.1: Determine nutritive value of feedstuffs

Competency Builders:

9.3.1.1 Classify feeds according to major nutrient groups
9.3.1.2 Identify factors influencing feedstuff quality
9.3.1.3 Interpret feed tags and labels
9.3.1.4 Interpret nutrient requirement tables

Competency 9.3.2: Feed birds

Competency Builders:

9.3.2.1 Follow general safety precautions
9.3.2.2 Follow feed-handling guidelines
9.3.2.3 Control waste feed
9.3.2.4 Remove spoiled feedstuffs
9.3.2.5 Observe birds for appetite loss
9.3.2.6 Clean and maintain equipment
9.3.2.7 Maintain feed records
9.3.2.8 Record daily water consumption
9.3.2.9 Record bird mortality daily
9.3.2.10 Grind and mix feed*
9.3.2.11 Prepare mineral mixes*
9.3.2.12 Follow regulations for mixing feed additives*

Unit 9: Poultry Production
Subunit 9.4: Flock Health

Competency 9.4.1: Monitor health

Competency Builders:

9.4.1.1 Follow general safety precautions
9.4.1.2 Follow health program
9.4.1.3 Evaluate condition of poultry*
9.4.1.4 Identify symptoms of nutritional imbalance*
9.4.1.5 Recognize symptoms of common poultry diseases*
9.4.1.6 Evaluate methods of treating various diseases*
9.4.1.7 Determine when to call veterinarian*
9.4.1.8 Necropsy birds*

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Competency 9.4.2: Follow sanitation program

Competency Builders:

9.4.2.1 Follow general safety precautions
9.4.2.2 Identify sanitation problems
9.4.2.3 Disinfect buildings and equipment
9.4.2.4 Keep poultry houses and premises free of houseflies
9.4.2.5 Install disinfectant footbath
9.4.2.6 Recognize insect pests*
9.4.2.7 Select cleaning chemicals and equipment*
9.4.2.8 Control human traffic*

Competency 9.4.3: Follow parasite-control program

Competency Builders:

9.4.3.1 Follow general safety precautions
9.4.3.2 Prevent parasite outbreaks
9.4.3.3 Keep birds free of external parasites
9.4.3.4 Record medication treatments
9.4.3.5 Identify common internal and external parasites and their symptoms*
9.4.3.6 Select materials to control parasites*
9.4.3.7 Apply pesticides*

Competency 9.4.4: Treat minor health problems

Competency Builders:

9.4.4.1 Follow general safety precautions
9.4.4.2 Record medication treatments
9.4.4.3 Consider human safety in administering drugs
9.4.4.4 Identify types of injections and procedures*
9.4.4.5 Administer medications and antibiotics*

Competency 9.4.5: Control pests

Competency Builders:

9.4.5.1 Recognize signs of rodents
9.4.5.2 Administer rodent-control measures
9.4.5.3 Prevent wild birds from entering house
9.4.5.4 Recognize insect pests
9.4.5.5 Control insect pests

Competency 9.4.6: Control bacterial, viral, and fungal diseases*

Competency Builders:

9.4.6.1 Follow general safety precautions*
9.4.6.2 Identify common disease symptoms*
9.4.6.3 Follow vaccination program*
9.4.6.4 Regulate air movement and temperature in facilities*
9.4.6.5 Administer time-release medications*

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Competency 9.4.7: Manage medications and chemicals*

Competency Builders:

9.4.7.1 Follow general safety precautions*
9.4.7.2 Store properly labeled medications and chemicals*
9.4.7.3 Dispose of unused or outdated medications and chemicals*
9.4.7.4 Maintain inventory-and-use record*
9.4.7.5 Follow government regulations*

Unit 9: Poultry Production

Subunit 9.5: Agricultural Mechanics

Competency 9.5.1: Operate and maintain brooding equipment

Competency Builders:

9.5.1.1 Follow general safety precautions
9.5.1.2 Maintain correct brooder temperature
9.5.1.3 Clean brooder filters
9.5.1.4 Check for efficient flame characteristics (e.g., blue)
9.5.1.5 Check for gas leaks

Competency 9.5.2: Operate and maintain environmental controls

Competency Builders:

9.5.2.1 Follow general safety precautions
9.5.2.2 Maintain correct house temperature
9.5.2.3 Clean air inlets
9.5.2.4 Test alarm system
9.5.2.5 Provide proper ventilation*
9.5.2.6 Inspect buildings for unwanted air infiltration*
9.5.2.7 Adjust supplemental (e.g., evaporative) cooling system*
9.5.2.8 Provide proper lighting*

Competency 9.5.3: Maintain grounds around buildings

Competency Builders:

9.5.3.1 Follow general safety precautions
9.5.3.2 Maintain driveways
9.5.3.3 Maintain all-weather road
9.5.3.4 Clean drainage ditches
9.5.3.5 Maintain drainage ditches
9.5.3.6 Mow grass and weeds
9.5.3.7 Apply chemical weed control

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Unit 10: Swine Production
Subunit 10.1: Animal Care

Competency 10.1.1: Perform general animal care procedures

Competency Builders:

10.1.1.1 Follow general safety precautions
10.1.1.2 Identify parts of animal anatomy
10.1.1.3 Follow animal identification system
10.1.1.4 Weigh animals
10.1.1.5 Bed animals
10.1.1.6 Demonstrate caring attitude toward animals

Competency 10.1.2: Restrain, handle, or move animals

Competency Builders:

10.1.2.1 Follow general safety precautions
10.1.2.2 Pen animals according to individual operation requirements (e.g., number, size, weight, sex, temperament, production, health)
10.1.2.3 Isolate and observe newly purchased animals
10.1.2.4 Restrain animals
10.1.2.5 Prepare carriers
10.1.2.6 Identify shipping regulations for hogs
10.1.2.7 Load and unload animals

Unit 10: Swine Production
Subunit 10.2: Genetics, Reproduction, and Breeding

Competency 10.2.1: Select animals

Competency Builders:

10.2.1.1 Identify type of operation (e.g., purebred, commercial)
10.2.1.2 Identify breeds
10.2.1.3 Select breeds
10.2.1.4 Verify age, health, and soundness of animal
10.2.1.5 Analyze production records and pedigrees
10.2.1.6 Evaluate registration papers for purebred animals
10.2.1.7 Select on basis of body type, conformation, and breeding qualities
10.2.1.8 Use probe to determine backfat thickness
10.2.1.9 Use ultrasound to determine loin eye size
10.2.1.10 Select on basis of heritability of traits
10.2.1.11 Evaluate potential herd sources
10.2.1.12 Select on basis of market specifications
10.2.1.13 Determine guidelines for selecting donor sows for embryo transfer*

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Competency 10.2.2: Plan breeding program

Competency Builders:

10.2.2.1 Identify parts and functions of reproductive system
10.2.2.2 Determine age and/or weight for breeding
10.2.2.3 Evaluate artificial versus natural insemination
10.2.2.4 Determine number of boars needed for herd
10.2.2.5 Determine number of sows needed to maintain facility at desired levels
10.2.2.6 Evaluate boar's fertility and soundness
10.2.2.7 Determine heat-synchronization program
10.2.2.8 Schedule breeding intervals or times
10.2.2.9 Determine insemination time
10.2.2.10 Arrange semen services
10.2.2.11 Determine flushing program
10.2.2.12 Evaluate body condition
10.2.2.13 Evaluate embryo transfer, embryo transplant, and superovulation program*
10.2.2.14 Determine embryo deposit time*

Competency 10.2.3: Breed animals

Competency Builders:

10.2.3.1 Follow general safety precautions
10.2.3.2 Detect heat in sows and gilts before breeding
10.2.3.3 Use hand mating
10.2.3.4 Use pen mating
10.2.3.5 Use pasture mating
10.2.3.6 Collect semen from boar
10.2.3.7 Handle and store semen
10.2.3.8 Breed using artificial insemination
10.2.3.9 Schedule pregnancy checks
10.2.3.10 Use ultrasound to determine pregnancy
10.2.3.11 Determine farrowing dates
10.2.3.12 Identify infertile animals
10.2.3.13 Arrange medical intervention for slow-to-conceive animals*

Competency 10.2.4: Care for newborn piglets

Competency Builders:

10.2.4.1 Follow general safety precautions
10.2.4.2 Check newborn piglets for physical deformities or health problems
10.2.4.3 Administer artificial respiration to newborn piglets
10.2.4.4 Revive chilled newborn piglets
10.2.4.5 Administer preventive health measures
10.2.4.6 Assist nursing
10.2.4.7 Clip navel cords and apply disinfectant
10.2.4.8 Notch ears for identification
10.2.4.9 Clip needle teeth
10.2.4.10 Castrate piglets five to ten days after birth
10.2.4.11 Dock and treat tails
10.2.4.12 Use cross-fostering procedures on piglets
10.2.4.13 Administer iron and other injections

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10.2.4.14 Stomach-tube piglets
10.2.4.15 Place piglets in brooder or use heat lamp
10.2.4.16 Offer supplementary milk supply

Competency 10.2.5: Care for mothers

Competency Builders:

10.2.5.1 Follow general safety precautions
10.2.5.2 Identify signs of approaching parturition
10.2.5.3 Prepare facilities for parturition
10.2.5.4 Prepare mothers for parturition
10.2.5.5 Assist mothers during delivery
10.2.5.6 Recognize farrowing disorders
10.2.5.7 Check mothers for expelled placentas
10.2.5.8 Remove afterbirth from farrowing area
10.2.5.9 Check teats for milk flow
10.2.5.10 Observe postparturition

Unit 10: Swine Production

Subunit 10.3: Waste Handling and Disposal

Competency 10.3.1: Manage waste handling and disposal system*

Competency Builders:

10.3.1.1 Identify agencies that control waste-handling regulations*
10.3.1.2 Follow local, state, and federal regulations*
10.3.1.3 Determine manure application methods and rates*
10.3.1.4 Determine factors affecting water quality*
10.3.1.5 Plan waste storage handling system to maintain nutrient value*

Competency 10.3.2: Handle and dispose of waste

Competency Builders:

10.3.2.1 Follow general safety precautions
10.3.2.2 Apply manure at acceptable rates on appropriate fields
10.3.2.3 Operate and maintain equipment
10.3.2.4 Control runoff from feedlots and housing quarters
10.3.2.5 Dispose of dead animals according to regulations

Unit 10: Swine Production

Subunit 10.4: Nutrition, Feeds, and Feeding

Competency 10.4.1: Determine nutrient requirements*

Competency Builders:

10.4.1.1 Evaluate production requirements*
10.4.1.2 Evaluate reproduction requirements*
10.4.1.3 Evaluate growth requirements*
10.4.1.4 Evaluate maintenance requirements*
10.4.1.5 Evaluate effects of nutritional requirements*
10.4.1.6 Evaluate effects of environmental factors on nutritional requirements*
10.4.1.7 Determine water requirements (e.g., flow rates)*
10.4.1.8 Identify factors that cause changes in appetite*

Competency 10.4.2: Determine nutritive value of feedstuffs*

Competency Builders:

10.4.2.1 Classify feeds according to major nutrient groups*
10.4.2.2 Identify factors influencing feedstuff quality*
10.4.2.3 Collect feedstuff samples for nutrient analysis*
10.4.2.4 Interpret nutrient analysis methods and results*
10.4.2.5 Interpret feed tag and label regulations*
10.4.2.6 Interpret feed composition tables*

Competency 10.4.3: Balance rations*

Competency Builders:

10.4.3.1 Select feeds and additives*
10.4.3.2 Identify desired nutrient levels*
10.4.3.3 Use Pearson square method*
10.4.3.4 Determine costs*
10.4.3.5 Substitute feedstuffs and evaluate their effects*
10.4.3.6 Evaluate and report ration palatability*
10.4.3.7 Interpret feed additive withdrawal laws and regulations*

Competency 10.4.4: Feed and water animals

Competency Builders:

10.4.4.1 Follow general safety precautions
10.4.4.2 Identify feeds
10.4.4.3 Follow feeding guidelines
10.4.4.4 Follow regulations for mixing feed additives
10.4.4.5 Grind and mix feedstuffs
10.4.4.6 Prepare mineral mixes
10.4.4.7 Select premix
10.4.4.8 Select feeding method
10.4.4.9 Feed animals using self-feeding
10.4.4.10 Wean piglets

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10.4.4.11 Feed milk-replacer to piglets
10.4.4.12 Start piglets on grain
10.4.4.13 Allocate feed to growing and mature animals
10.4.4.14 Precondition animals for shipping
10.4.4.15 Precondition animals for feedlot
10.4.4.16 Observe animals for changes in appetite
10.4.4.17 Identify reactions to flavors, enzymes, molds, and microtoxins
10.4.4.18 Provide adequate water
10.4.4.19 Maintain water quality

Competency 10.4.5: Maintain feeding area

Competency Builders:

10.4.5.1 Adjust self-feeders
10.4.5.2 Clean and adjust waterers
10.4.5.3 Identify and remove spoiled feedstuffs
10.4.5.4 Control feed waste
10.4.5.5 Clean and repair equipment

Unit 10: Swine Production

Subunit 10.5: Herd Health

Competency 10.5.1: Treat health problems

Competency Builders:

10.5.1.1 Follow general safety precautions
10.5.1.2 Recognize symptoms of illness
10.5.1.3 Recognize and treat injuries
10.5.1.4 Recognize symptoms of nutritional deficiency or toxicity
10.5.1.5 Identify symptoms of internal and external parasites
10.5.1.6 Take animal's temperature
10.5.1.7 Select equipment to administer treatment
10.5.1.8 Use equipment to administer treatment
10.5.1.9 Mark treated animal
10.5.1.10 Record treatment
10.5.1.11 Identify material needed for treatment*
10.5.1.12 Determine amount of material needed for treatment*

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Competency 10.5.2: Prevent health problems

Competency Builders:

10.5.2.1 Follow general safety precautions
10.5.2.2 Develop and follow vaccination program
10.5.2.3 Dust animals
10.5.2.4 Spray animals
10.5.2.5 Worm animals
10.5.2.6 Exercise penned animals
10.5.2.7 Provide clean, dry, draft-free environment
10.5.2.8 Maintain high level of sanitation
10.5.2.9 Disinfect boots and clothing
10.5.2.10 Control flow of people and animals through facility
10.5.2.11 Select and use cleaning chemicals, insecticides, and equipment
10.5.2.12 Evaluate condition of animals
10.5.2.13 Isolate injured or diseased animals
10.5.2.14 Determine when to call veterinarian

Competency 10.5.3: Manage medications, chemicals, and instruments

Competency Builders:

10.5.3.1 Follow general safety precautions
10.5.3.2 Store properly labeled medications and chemicals
10.5.3.3 Dispose of unused or outdated medications and chemicals
10.5.3.4 Dispose of used syringes and needles
10.5.3.5 Calculate cost of treatments
10.5.3.6 Maintain inventory-and-use record
10.5.3.7 Follow government regulations

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